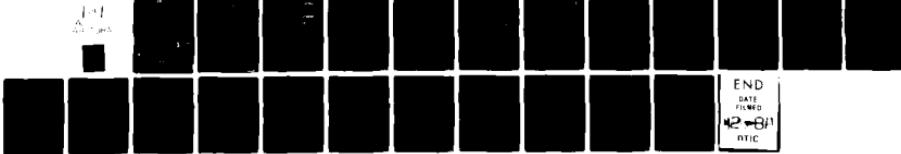


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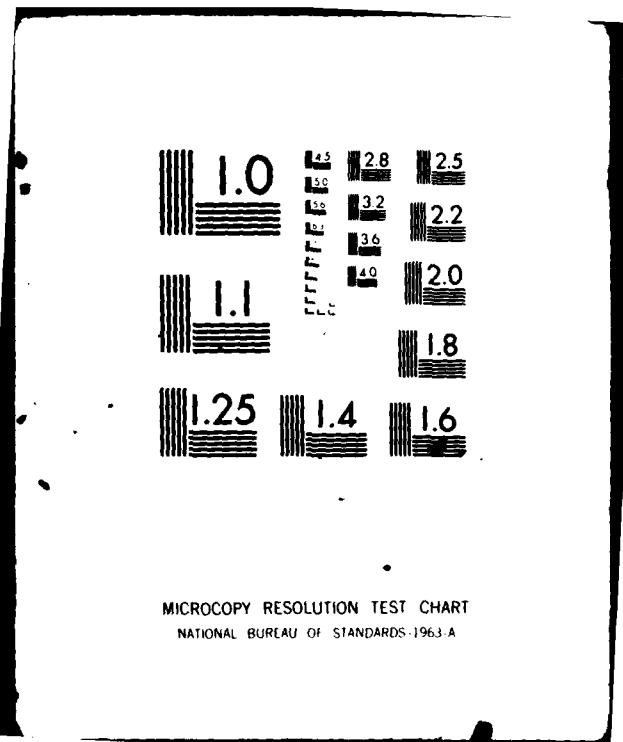
ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
193040 MLRS, MISSILE NUMBER BN-051, ROUND NUMBER V-184/MD-40, 1--ETC(U)
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METEOROLOGICAL DATA REPORT

19304D MLRS
Missile Number BN-051
Round Number Y-184/RD40
14 Aug 1981

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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4. TITLE (and Subtitle) 19304D MLRS, Missile Number BN-051, Round Number V-184/MD-40, 14 Aug 1981.		5. TYPE OF REPORT & PERIOD COVERED
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21. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304D MLRS, Missile Number BN-051, Round Number V-184/MD-40 presented in tabular form.		

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INTRODUCTION

19304D MLRS, Missile Number BN-051, Round Number V-184/MD-40, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1530 MDT, 14 Aug 1981. The scheduled launch time was 1530 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air:

(1) Low Level wind data were obtained from Pilot-Balloon observations at:

SITE AND ALTITUDE

LC-33 1550 Meters
NICK 2000 Meters

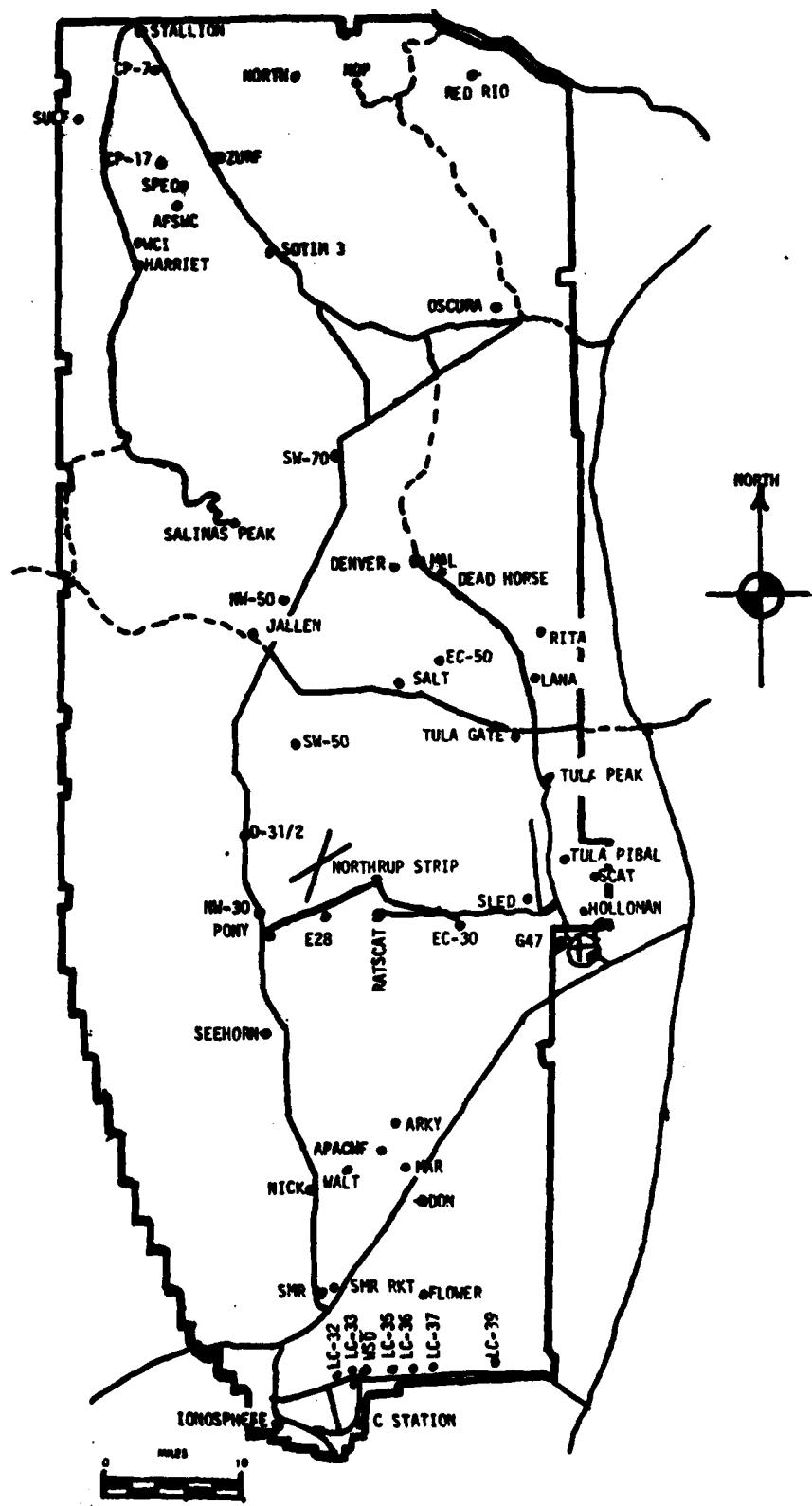
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

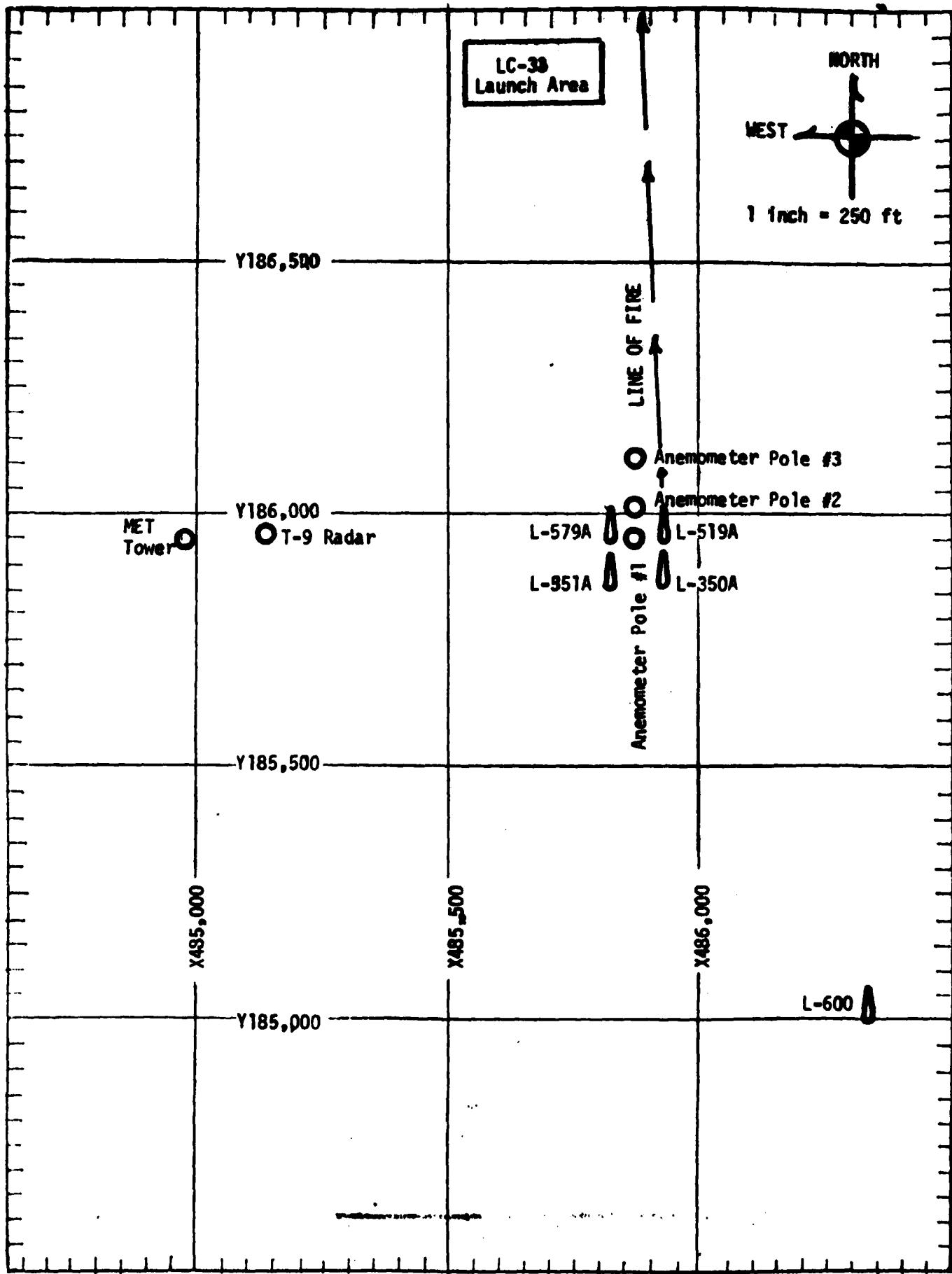
SITE AND LOCATION

WSD 1130 MDT
WSD 1300 MDT
WSD 1530 MDT

Accommodation	None
Water	None
Power	None
Telephone	None
Mail	None
Facilities	None
Availability	None
Availability Codes	None
Dist	Avail and/or Special
A	

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1

DATE 14 MONTH NOV YEAR 1981

TIME H H M	PRESSURE mb	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION deg Tn	WIND SPEED kts	CHARACTER	VISIBIL- ITY
1530	881.8	30.0	14.7	40	1.013	175	.05		35

OBSTRUCTIONS TO VISIBILITY	CLOUDS			3rd LAYER			REMARKS
	1st LAYER AMT TYPE	2nd LAYER AMT TYPE	HGT	AMT	TYPE	HGT	
2	CU	6,000	0	AS	10,000	1	CI 25,000

PSYCHROMETRIC COMPUTATION

TIME: MDT	1530		
DRY BULB TEMP.	30.0		
WET BULB TEMP.	19.5		
WET BULB DEPR.	10.5		
DEW POINT	14.7		
RELATIVE HUMID.	40%		

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.93			X485,877.29		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	C A L M	T-30	C A L M	C A L M	T-30	258	05	
T-20	C A L M	T-20	C A L M	C A L M	T-20	257	03	
T-10	C A L M	T-10	C A L M	C A L M	T-10	357	01	
T0.0	C A L M	T0.0	230	01	T0.0	261	02	
T+10	C A L M	T+10	228	03	T+10	215	04	

TABLE 3

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	139	07	T-30	169	04
T-20	157	07	T-20	163	04
T-10	162	07	T-10	212	03
T0.0	151	07	T0.0	205	03
T+10	194	06	T+10	168	04

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	194	03	T-30	119	03
T-20	175	02	T-20	106	05
T-10	220	01	T-10	105	05
T0.0	220	03	T0.0	114	05
T+10	227	04	T+10	126	05

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 14 Aug 1981

SITE: LC-33
 TIME: 1530 MDT
 WSTM COORDINATES:
 X= 484,837.34
 Y= 184,124.44
 H= 3,975.57

SITE: NICK
 TIME: 1550 MDT
 JSTM COORDINATES:
 X= 470-734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	175	05	SURFACE	195	03
150	177	02	150	178	03
210	192	02	210	180	03
270	222	01	270	193	03
330	257	01	330	208	02
390	290	01	390	209	02
500	327	03	500	198	02
650	332	06	650	099	01
800	321	05	800	013	02
950	331	03	950	002	03
1150	342	06	1150	340	03
1350	349	06	1350	310	09
1550	337	05	1550	328	09
1750	M I S G		1750	321	08
2000	M I S G		2000	297	03

Data obtained from Double Theodolite
 Pilot-Balloon Observation.

Data obtained from Single Theodolite
 Pilot-Balloon Observation.

TABLE 5AIMING AND T-TIME COMPUTER MET MESSAGES
14 Aug 1981

WSD 1130 MDT	WSD 1300 MDT	WSD 1530 MDT
METCM1324064	METCM1324064	METCM1324064
141750122884	141900122883	142150122882
00124004 30020884	00507003 30340883	00311005 30530882
01123004 29880874	01477004 30220873	01358008 30390872
02096001 29570849	02591002 29920849	02523005 30050848
03011002 29260811	03522001 29550811	03476005 29610810
04000000 28920765	04559003 29110765	04306002 29110764
05007003 28550721	05047005 28680721	05597003 28710720
06527001 28270679	06550005 28350679	06452004 28410679
07320006 28070639	07348006 28110640	07379010 28050639
08326010 27700601	08348013 27780602	08358012 27740601
09314009 27330565	09325013 27420566	09342013 27360565

STATION ALTITUDE 3989.00 FEET MSL
14 AUG. 61 1130 HRS MDT
ASCENSION NO. 552

SIGNIFICANT LEVEL DATA

2260.0552
WHITE SANDS

GEODETIC COORDINATES
32°40'04.3" LAT DEG
106°37'03.3" LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	
			DEMPONI	DEMPONI
884.1	3989.0	24.9	15.0	54.0
850.0	5115.2	20.1	11.8	59.0
830.0	5788.6	18.1	11.9	67.0
808.0	6544.7	17.1	9.5	61.0
782.6	7438.9	15.3	9.2	67.0
745.2	8798.7	12.5	6.8	68.0
700.0	10514.9	8.6	3.4	70.0
690.4	10890.9	8.3	4.3	76.0
672.4	11608.5	7.4	3.3	75.0
645.6	12710.1	6.8	-4	60.0
602.6	14561.1	3.1	-5.3	54.0
577.2	15703.7	.3	-6.1	62.0
560.4	16482.2	-5	-8.4	55.0
543.4	17289.8	-2.4	-10.9	52.0
527.0	18088.3	-4.0	-7.6	76.0
515.6	18656.5	-4.0	-10.2	62.0
500.0	19452.1	-5.7	-11.2	65.0
477.8	20619.6	-7.9	-12.9	67.0
462.2	21466.9	-9.3	-17.3	52.0
447.0	22315.7	-10.7	-19.8	47.0
428.1	23402.6	-13.8	-23.1	45.0
417.2	24046.9	-14.7	-20.7	60.0
400.0	25092.7	-16.6	-23.5	55.0

STATION ALTITUDE 3989.00 FEET MSL
19 AUG. 61 1130 HRS K.D.
ASCENSION NO. 552

UPPER AIR DATA
2260020552
WHITE SANDS
TABLE 7

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES	AIR DEPOSITION CENTIGRADE	REL. HUM. PERCENT	SPEED OF SOUND KNOTS	IMU DATA		INDEX OF REFRACTION
						GM/CURIC METER	DIRECTION DEGREES (TN)	
3989.0	884.1	24.9	15.0	54.0	1025.8	675.0	70.0	4.1
4000.0	883.8	24.9	14.9	54.0	1025.6	675.0	69.9	4.1
4500.0	868.5	22.7	13.6	56.3	1015.6	672.4	63.4	3.2
5000.0	853.4	20.6	12.2	58.5	1005.8	669.8	52.1	2.3
5500.0	838.5	19.0	11.9	63.6	993.7	667.9	30.3	1.7
6000.0	823.8	17.8	11.2	65.3	980.2	666.6	9.6	1.6
6500.0	809.3	17.2	9.7	61.4	965.7	665.7	356.9	1.8
7000.0	795.0	16.2	9.4	64.1	951.8	664.5	15.1	1.4
7500.0	780.9	15.2	9.1	67.0	938.2	663.4	34.1	1.3
8000.0	766.9	14.1	8.2	67.4	925.0	662.1	28.3	1.4
8500.0	751.3	13.1	7.3	67.8	912.0	660.8	14.6	1.5
9000.0	739.7	12.0	6.4	68.2	899.2	659.5	351.4	2.1
9500.0	726.4	10.9	5.4	68.8	886.7	658.1	352.1	2.6
10000.0	713.3	9.8	4.4	69.4	874.3	656.7	11.6	3.0
10500.0	700.4	8.6	3.5	70.0	862.2	655.4	13.4	2.6
11000.0	687.6	8.2	4.2	75.8	847.7	654.9	357.5	1.5
11500.0	675.1	7.5	3.4	75.2	834.2	654.1	258.0	0.6
12000.0	662.8	7.2	2.0	69.7	820.3	653.6	218.9	2.6
12500.0	650.6	6.9	.3	62.9	806.4	653.2	196.6	4.7
13000.0	638.7	6.2	-1.2	59.1	793.8	652.2	188.5	7.0
13500.0	626.9	5.2	-2.5	57.4	782.1	651.0	185.1	6.5
14000.0	615.3	4.2	-3.8	55.8	770.6	649.7	182.7	9.7
14500.0	604.0	3.2	-5.1	54.2	759.3	648.5	180.3	9.2
15000.0	592.7	2.0	-5.6	57.1	748.4	647.1	178.7	8.8
15500.0	581.6	.8	-5.9	60.6	737.8	645.6	179.6	8.3
16000.0	570.7	-0.0	-7.0	59.3	726.2	644.6	176.5	8.7
16500.0	560.0	-0.5	-8.5	54.9	714.1	643.9	171.0	9.8
17000.0	549.4	-1.7	-10.0	53.1	703.8	642.5	166.5	10.6
17500.0	539.0	-2.6	-9.8	58.3	693.2	641.2	162.8	11.7
18000.0	526.8	-3.8	-7.9	73.3	682.3	640.1	165.8	13.0
18500.0	516.7	-4.0	-9.4	65.9	669.9	639.8	169.8	14.4
19000.0	506.8	-4.7	-10.6	63.3	659.0	638.9	176.4	15.6
19500.0	494.1	-5.6	-11.3	65.1	649.0	637.6	183.5	17.0
20000.0	489.5	-6.7	-12.0	65.9	638.8	636.5	189.9	16.1
20500.0	480.0	-7.7	-12.8	66.8	628.8	635.3	195.5	19.2
21000.0	470.7	-8.5	-14.8	60.3	618.7	634.2	194.7	20.2
21500.0	461.6	-9.4	-17.4	51.8	608.8	633.1	193.0	21.3
22000.0	452.6	-10.2	-18.9	45.9	598.9	632.1	188.5	21.2
22500.0	443.7	-11.2	-20.3	46.7	589.6	630.8	183.6	21.4
23000.0	435.0	-12.7	-21.9	45.7	581.2	629.1	180.9	20.9

STATION ALTITUDE 3989.00 FEET MSL
14 AUG. 81 1130 HRS MDT
ASCENSION NO. 552

UPPER AIR DATA
2260020552
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREESES	DEWPOINT DEGREESES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.4	-13.9	-22.7	47.3	572.6	627.5	177.3	20.6	1.000153
24000.0	418.0	-14.6	-20.9	58.9	562.7	626.7			1.000152
24500.0	409.7	-15.5	-21.9	57.8	553.4	625.6			1.000129
25000.0	401.5	-16.4	-23.2	55.4	544.3	624.5			1.000127

STATION ALTITUDE 3989.00 FEET MSL
18 AUG. 81 1130 HRS MDT
ASCENSION NO. 552

MANDATORY LEVELS

2260020552
WHITE SANDS

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
		AIR DEGREES	DEWPONT CENTIGRADE	GRADE			
850.0	5111.	20.1	11.6	59.	48.4	2.2	
800.0	6818.	16.5	9.4	63.	7.7	1.5	
750.0	6613.	12.9	7.1	68.	7.8	1.6	
700.0	10504.	8.6	3.4	70.	13.2	2.6	
650.0	12513.	6.9	2	63.	19.2	4.8	
600.0	14659.	2.8	-5.4	55.	179.4	9.1	
550.0	16952.	-1.7	-9.9	53.	166.8	10.7	
500.0	19424.	-5.7	-11.2	65.	162.8	16.8	
450.0	22112.	-10.4	-19.3	48.	167.2	21.2	
400.0	25050.	-16.6	-23.5	55.			

GEODETIC COORDINATE,
32.40043 LAT DEG
106.37033 LONG DEG

STATION ALTITUDE 3989.00 FEET PSL
 14 AUG. 81 1300 HRS PDT
 ASCENSION NO. 553

SIGNIFICANT LEVEL DATA

226000Z053
 WHIT SANDS

TABLE 9

PRESSURE GEOMETRIC MILLIBARS MSL FETT	ALTITUDE DEGREES CENTIGRADE	TEMPERATURE AIR DEP. UNI	REL. HUM. PERCENT
883.2	3989.0	28.0	96.0
850.0	5099.5	24.0	13.5
792.4	7096.7	18.3	9.4
736.6	9139.4	13.3	5.5
700.0	10541.8	9.6	5.0
691.2	10861.4	9.0	5.0
655.8	12317.1	7.2	2.7
620.8	13798.1	5.4	-2.2
578.6	15678.0	1.4	-5.7
537.4	17623.6	-2.2	-5.3
500.0	19503.2	-4.4	-10.2
481.4	20485.0	-6.3	-13.4
465.0	21372.7	-8.0	-15.2
449.8	22220.5	-9.6	-15.3
425.4	23631.5	-12.2	-25.9
420.2	23940.8	-12.5	-25.1
413.0	24374.5	-13.6	-16.6
400.0	25173.5	-15.0	-21.0
			60.0

STATION ALTITUDE 3982.00 FEET MSL
 JN AUG. 81 1300 HRS MDT
 ASCENSION NO. 553

UPPER AIR DATA
 226002Z553
 WHITE SANDS
 TABLE 10

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEODETIC PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEWPONT DEGREES CENTIGRADE	REL.HUM. PERCENT	SOUND METER KNOTS	WIND DATA		INDEX OF REFRACTION
				6M/CUBIC	DIRECTION DEGREES (TN) KNOTS	
5989.0	863.2	28.0	15.3	46.0	1014.1	2.9
4000.0	882.9	28.0	15.3	46.1	1013.8	2.9
4500.0	867.6	26.2	14.5	46.6	1002.7	2.6
5000.0	652.9	29.4	13.7	51.5	991.8	2.2
5500.0	838.1	22.9	12.7	52.8	979.8	1.9
6000.0	823.6	21.4	11.7	53.8	967.6	1.6
6500.0	807.9	20.0	10.6	54.8	955.9	1.3
7000.0	795.2	18.6	9.6	55.8	944.1	1.7
7500.0	781.1	17.3	8.6	56.6	931.7	2.0
8000.0	767.3	16.1	7.7	57.3	919.3	2.3
8500.0	753.6	14.9	6.7	56.1	907.1	2.0
9000.0	740.3	13.6	5.7	56.8	895.0	3.5
9500.0	727.0	12.3	5.4	62.6	862.9	4.4
10000.0	713.9	11.0	5.3	67.6	871.0	11.2
10500.0	701.1	9.7	5.0	72.6	859.3	3.7
11000.0	686.3	8.9	4.8	75.6	846.3	3.6
11500.0	675.8	8.2	4.0	74.7	832.9	3.3
12000.0	663.5	7.6	3.2	73.7	819.7	2.2
12500.0	651.9	7.0	2.1	71.1	806.7	3.5
13000.0	639.4	6.4	0.5	66.1	793.9	6.6
13500.0	627.7	5.8	-1.2	61.0	781.3	9.1
14000.0	616.1	5.0	-2.6	58.1	769.3	11.6
14500.0	604.7	5.9	-3.5	58.4	756.1	11.9
15000.0	593.5	2.8	-4.4	56.6	747.0	12.3
15500.0	582.5	1.8	-5.4	56.9	736.1	12.6
16000.0	571.6	0	-5.6	62.3	726.9	13.2
16500.0	560.8	-1	-5.6	67.9	715.6	13.6
17000.0	550.3	-1.0	-5.3	72.6	702.5	15.6
17500.0	539.9	-2.0	-5.3	77.7	691.6	15.7
18000.0	529.7	-2.6	-6.3	76.0	680.3	15.4
18500.0	519.6	-3.2	-7.5	72.0	669.9	15.3
19000.0	509.7	-3.6	-7.1	67.9	713.6	15.6
19500.0	500.1	-4.4	-10.2	66.0	657.4	13.9
20000.0	490.5	-5.4	-11.8	60.5	646.6	14.4
20500.0	481.1	-6.3	-13.4	57.0	636.9	14.0
21000.0	471.8	-7.3	-14.9	56.9	627.0	15.3
21500.0	462.7	-8.2	-15.2	57.1	617.5	15.5
22000.0	453.7	-9.2	-15.3	61.2	597.8	15.2
22500.0	444.9	-10.1	-16.6	57.8	588.4	16.9
23000.0	436.2	-11.0	-19.7	57.0	571.1	15.2

STATION ALTITUDE 3969.00 FEET MSL
1 AUG. 61 1300 WWS MDI
ASCENSION NO. 55

UPPER AIR DATA

2261020553
WHITE SANDS

GEODETIC COORDINATES
52.9045 LAT DEG
106.37033 LONG DEG

TABLE 10 CON'T

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	ATMOSPHERE DEGREES CELSIUS	DENSITY PERCENT	SPEED OF SOUND METERS	DIRECTION DEGREES (TIN)	MIND DATA KNOTS	INDEX OF REFRACTION
23500.0	427.6	-12.0	-22.9	34.4	569.8	629.9	176.9	15.0
24000.0	419.2	-12.7	-23.9	30.4	560.2	629.0		1.000130
24500.0	410.9	-13.8	-18.9	65.1	551.3	627.8		1.000131
25000.0	402.8	-14.7	-20.5	61.3	542.3	626.7		1.000128

STATION ALTITUDE 5969.00 FEET MSL
 10 AUG. 81 1300 HRS PDT
 ASCENSION NO. 553

MANUFACTORY LEVELS

2260020553

WHITE SANDS

GEODETIC COORDINATES
 32°44'03" LAT 06°
 106°37'03" LONG 06°

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES CENTIGRADE	WIND DATA		
			AIR DEPOINT	REL. HUM. PERCENT	DIRECTION DEGREES KNOTS
850.0	5096.	24.0	13.5	52.	268.0 2.2
800.0	6829.	19.1	10.0	55.	296.2 1.5
750.0	8631.	14.5	6.9	58.	368.9 3.1
700.0	10531.	9.6	5.0	73.	352.6 3.6
650.0	12544.	6.9	1.9	71.	211.7 3.6
600.0	14694.	3.5	-3.9	58.	194.0 12.1
550.0	16994.	-1.1	-7.3	73.	182.1 15.4
500.0	19475.	-6.4	-10.2	69.	206.2 13.9
450.0	22175.	-9.6	-15.3	63.	183.8 15.1
400.0	25130.	-15.0	-21.0	60.	

SATION ALTITUDE 3989.00 FEET PSL
 14 AUG. 81 1500 HRS PDT
 ASCENSION NO. 554

SIGNIFICANT LEVEL DATA
 2261070154
 WHITE SANDS
 TABLE 12

GEODRATIC COORDINATES
 32°40'04" LAT DEG
 106°37'03" LON DEG

PRESSURE GEOMETRIC MILLIBARS MSL FLEET	ALTITUDE DEGREES CENTIGRADE	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
881.8	3489.0	30.0	39.0
850.0	5059.2	25.3	48.0
816.0	6231.6	21.5	55.0
797.6	6880.1	19.5	56.0
734.8	9177.2	12.9	76.0
726.2	9502.7	12.1	76.0
700.0	10514.3	10.8	5.1
691.2	10861.6	10.6	5.2
639.6	12971.3	5.6	1.2
622.6	13696.5	5.5	64.0
548.8	17047.2	-1.6	64.0
517.4	18586.2	-3.4	-12.1
500.0	19473.5	-5.4	-12.8
479.0	20577.7	-7.5	-11.3
471.6	20976.2	-8.4	-15.4
464.2	21380.2	-8.5	-15.5
449.6	22193.8	-10.2	-14.4
426.4	23534.9	-11.5	-17.9
400.0	25136.5	-15.4	-20.5

STATION ALTITUDE 3989.00 FEET MSL
19 AUG. 81 1530 HRS MDT
ASCENSION NO. 554

UPPER AIR DATA
2260020554
WHITE SANDS
TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEMPPOINT PERCENT	REL. HUM. PERCENT	DENSITY KG/CUBIC METER	SPEED OF WIND KNOTS	WIND DATA		INDEX OF REFRACTION
							DEGREES DEGREES (TN)	DIRECTION DEGREES (TN)	
5989.0	991.0	30.0	14.5	39.0	1006.1	680.7	175.0	5.1	1.000293
4900.0	881.5	30.0	19.5	39.1	1005.9	673.7	175.3	5.0	1.000293
4500.0	866.5	27.8	14.1	43.3	996.1	678.2	190.0	8.1	1.000290
5000.0	851.7	25.6	13.6	47.5	986.4	675.7	211.0	3.6	1.000286
5500.0	837.1	23.9	13.0	50.6	975.1	673.7	235.0	3.6	1.000282
6000.0	822.6	22.3	12.9	53.6	963.7	671.8	255.0	4.2	1.000277
6500.0	808.3	20.7	11.7	56.2	952.2	669.9	269.7	5.2	1.000272
7000.0	794.2	19.2	10.9	58.9	940.6	668.1	266.7	4.3	1.000266
7500.0	780.1	17.7	10.6	62.9	929.6	666.5	265.1	3.3	1.000264
6000.0	766.3	16.3	10.1	66.8	916.7	664.8	286.9	1.6	1.000260
6500.0	752.0	16.0	9.6	70.7	905.1	663.1	14.6	1.2	1.000256
9000.0	739.5	15.9	9.0	74.6	893.7	661.6	16.0	1.4	1.000252
9500.0	726.3	12.1	8.0	76.0	882.0	659.8	9.5	1.4	1.000247
10000.0	713.2	11.5	6.6	72.1	866.4	658.9	285.6	1.7	1.000239
10500.0	700.4	10.8	5.2	68.1	855.1	656.1	259.4	3.6	1.000232
11000.0	687.7	10.3	4.9	69.3	841.2	657.4	258.0	4.1	1.000228
11500.0	675.2	9.1	4.0	70.2	829.6	656.0	252.8	8.4	1.000223
12000.0	662.9	7.9	3.0	71.2	816.1	654.5	241.7	4.4	1.000219
12500.0	650.8	6.7	2.1	72.1	806.7	653.1	225.6	6.5	1.000214
13000.0	638.9	5.6	1.1	72.6	795.4	651.7	216.9	9.8	1.000209
13500.0	627.2	5.4	0.9	66.4	781.6	651.3	211.9	11.1	1.000203
14000.0	615.5	4.7	-1.5	64.0	769.2	650.6	206.7	11.9	1.000198
14500.0	604.0	3.6	-2.5	64.0	757.8	649.2	202.5	11.4	1.000194
15000.0	592.8	2.6	-3.5	64.0	746.6	647.9	198.7	11.2	1.000190
15500.0	581.7	1.6	-4.5	64.0	735.5	646.7	197.4	12.0	1.000186
16000.0	570.9	0.6	-5.4	64.0	729.6	645.9	196.9	12.5	1.000182
16500.0	560.2	-0.5	-6.4	64.0	717.9	644.1	195.7	12.7	1.000178
17000.0	549.8	-1.5	-7.4	64.0	703.3	642.9	201.0	12.6	1.000175
17500.0	539.4	-2.1	-8.0	60.2	691.8	642.1	210.3	12.4	1.000170
18000.0	529.1	-2.7	-10.3	56.0	680.3	641.3	219.4	11.7	1.000166
18500.0	519.1	-3.3	-11.8	51.7	669.9	640.5	223.6	11.2	1.000162
19000.0	509.2	-4.3	-12.4	53.5	659.7	639.3	219.1	10.6	1.000159
19500.0	499.5	-5.5	-12.7	56.4	649.9	638.0	212.1	10.2	1.000157
20000.0	489.9	-6.4	-12.0	64.6	638.6	636.9	203.1	10.1	1.000155
20500.0	480.4	-7.4	-11.9	72.7	628.9	635.8	197.7	10.8	1.000154
21000.0	471.2	-8.4	-15.3	57.6	619.1	634.4	194.6	12.0	1.000148
21500.0	462.0	-8.8	-13.6	67.6	607.7	634.0	195.2	12.9	1.000147
22000.0	453.0	-9.8	-14.2	70.0	598.3	632.8	196.1	13.9	1.000146
22500.0	444.2	-10.5	-15.2	68.3	588.7	631.9	197.4	14.5	1.000141
23000.0	435.5	-11.0	-16.5	63.8	577.8	631.3	198.7	15.4	1.000136

STATION ALTITUDE 3989.00 FEET MSL
14 AUG. 81 1530 HWS MDI
ASCENSION NO. 554

UPPER AIR DATA

2260020554
WHITE SANDS

GEODETIC COORDINATES
52.40043 LAT DEG
106.37043 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPONT DEGREES CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND METERS	WIND DATA DIRECTION DEGREES (T) KNOTS	INDEX OF REFRACTION
23500.0	427.0	-11.5	55.3	567.7	030.6	1.000135
24000.0	418.6	-12.6	60.7	559.0	629.2	1.000132
24500.0	410.3	-13.9	62.6	5511.6	627.7	1.000130
25000.0	402.2	-15.1	-20.2	542.3	626.2	1.000128

STATION ALTITUDE 3989.00 FEET MSL
19 AUG. 61
1530 HRS MDI
ASCENSION NO. 554

MANUFACTORY LEVELS

226002U55
WHITE SANDS

GEODETIC COORDINATES
32°40.043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL.HUM. PERCENT	WIND DATA	
		AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TM)	SPEED KNOTS
850.0	5055.	25.3	13.5	48.	213.7	3.5
800.0	6789.	19.8	11.2	56.	267.7	4.7
750.0	8601.	14.5	9.5	72.	25.1	1.5
700.0	10504.	10.8	5.1	68.	259.3	3.6
650.0	12522.	6.6	2.0	72.	224.8	6.7
600.0	14670.	3.3	-2.9	64.	200.9	11.2
550.0	16968.	-1.5	-7.4	64.	200.7	12.6
500.0	19955.	-5.4	-12.8	56.	212.6	10.2
450.0	22137.	-10.2	-14.4	71.	196.5	14.1
400.0	25094.	-15.4	-20.5	65.		

